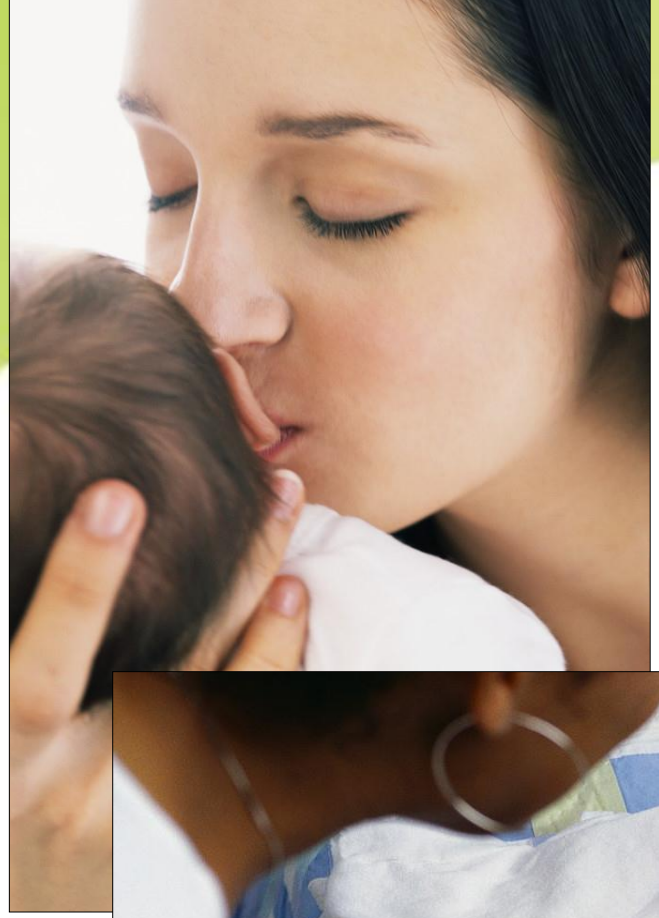
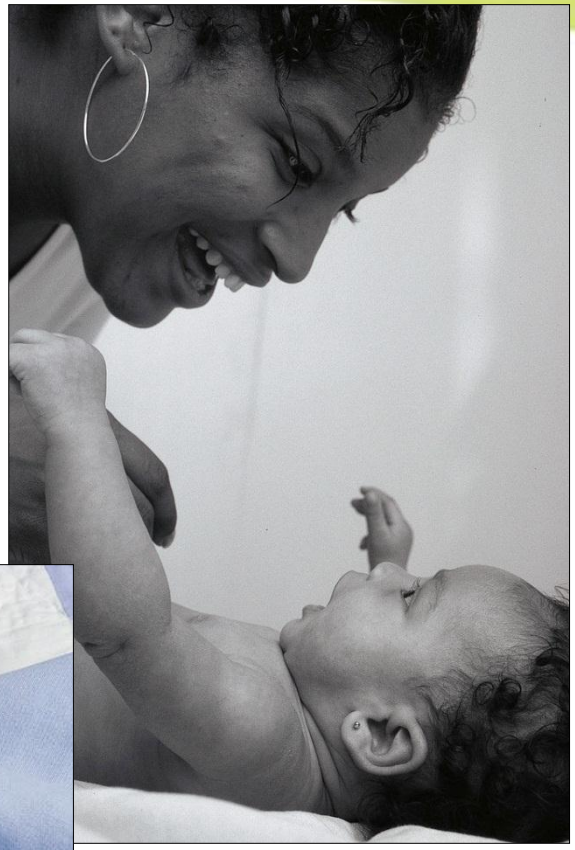


13.3



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2006-2010

	Infant Deaths	Homicides
2006	62	89
2007	73	63
2008	73	73
2009	80	55
2010	68	68
	Total: 356	Total: 348

Source: Cincinnati Health Department 2012

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PLACE OF BIRTH OF CINCINNATI BABIES-1956

	White	Colored	Other	Total
Cincinnati General Hospital	1,353	2,440	1	3,794
Good Samaritan Hospital	2,798	11	3	2,812
Bethesda Hospital	1,592	19	1	1,612
Christ Hospital	1,104	52	2	1,158
Jewish Hospital	1,712	286	2	2,000
Deaconess Hospital	595	2	0	597
St. Mary's Hospital	537	45	1	583
Catherine Booth Home and Hospital	81	306	1	388
Total Resident Hospital Births	9,772	3,161	11	12,944
Total Resident Home Births	66	72	0	138
Total Resident Births	9,838	3,233	11	13,082
Total Non-Resident Births				8,621
Total Births in Cincinnati				21,703

98.95% Resident Births occurred in Hospitals
99.33% Resident White Births occurred in Hospitals
97.77% Resident Colored Births occurred in Hospitals

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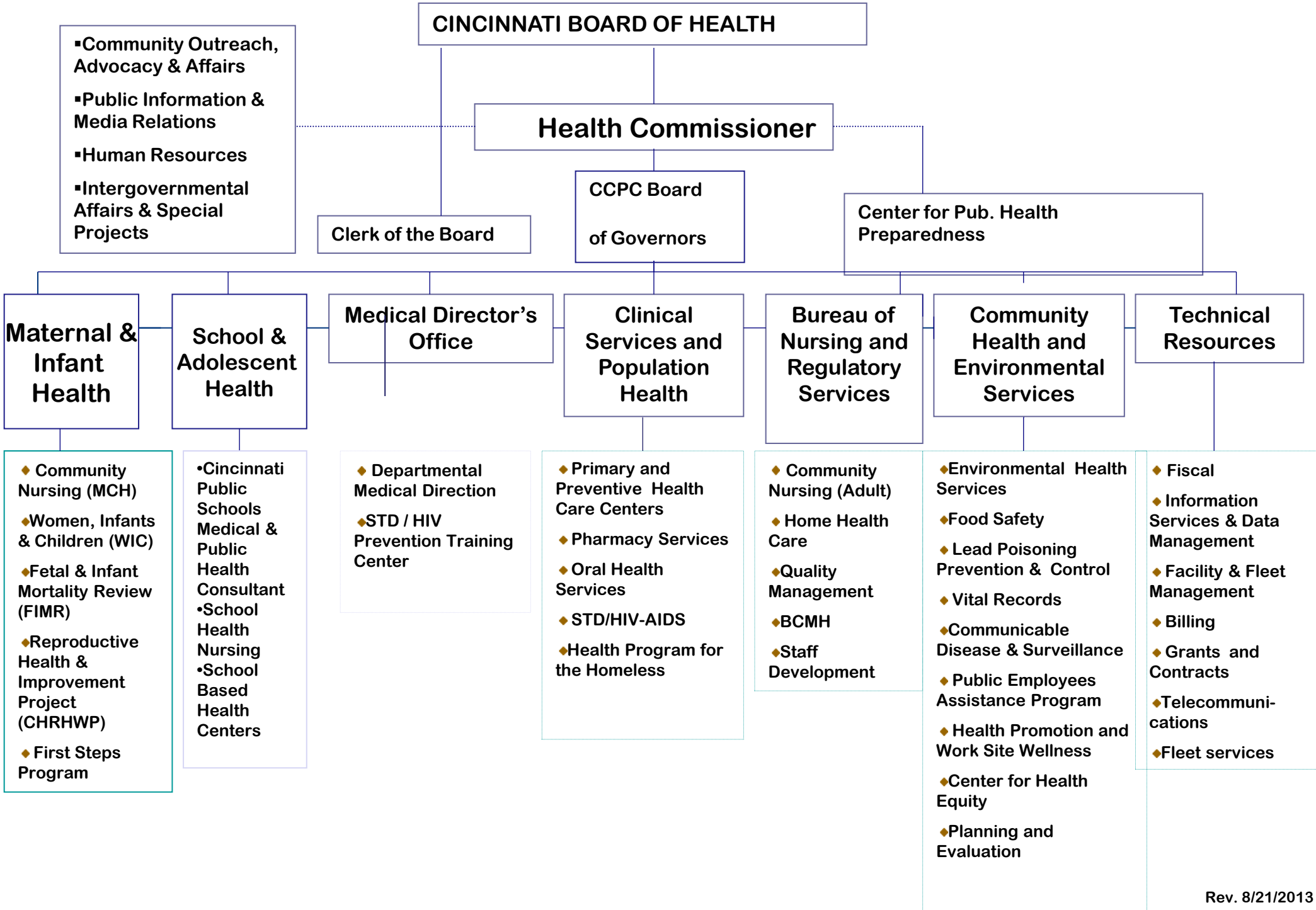
Cincinnati Department of Health Table of Organization



Rev. 8/21/2013

Core Infant Vitality Surveillance Components

- Monitoring and Surveillance Data
- Care Coordination – Home Visitation
- Care Experience

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Surveillance Data

- Data includes:

•Race
•Ethnicity
•Prenatal care provider by health center
•Payor source
•Cesarean rate
•Preterm labor rate
•Low birth weight rate
•Trimester of entry into care

- Current Infant Vitality Surveillance Network Participants

•UC Health
•Cincinnati City Primary Care (CHD)
•Eight Community Health Centers

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Infant Vitality Surveillance Network

First Steps Program

What Exists

CCPC (CHD) Health Centers
Community Health Centers
Enhanced Access (Perinatal Tracking)
Prenatal Care Consultation
UHC OB-Gyn
The Christ Hospital
Home Visitation Agencies
Post Partum Consultation – CCPC Pediatrics
Home Visitation *Pathways* – Skilled Nursing
Care Coordination
Community Health Worker Outreach
Follow – up
Health Ed. (Prenatal, Post Partum)
0 – 2 years
WIC
Referral to CCPC
Pre conceptual Health Ed.
Prenatal Health Ed.
Post Partum Health Ed
Data
CHD UHC Delivery Report
Monthly

Published Ahead of Print on February 10, 2010, as 10.2105/AJPH.2009.168922
The latest version is at http://ajph.aphapublications.org/doi/10.2105/AJPH.2009.168922

The Impact of Prenatal WIC Participation on Infant Mortality and Racial Disparities

Intisar Khanani, MPH, Jon Elam, AS, Rick Hearn, BS, Camille Jones, MD, MPH, and Noble Maseru, PhD, MPH

Objectives. We assessed the value of Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) services as a public health intervention seeking to improve birth outcomes and reduce racial disparities.

Methods. We compared the infant mortality rate (IMR) per 1000 live births and percentage of preterm births overall and by race for prenatal WIC versus non-WIC participants in Hamilton County, Ohio, from 2005 to 2008.

Results. The IMR was lower for WIC participants than for non-WIC participants (8.0 vs 10.6; $P=.04$). For African Americans, the IMR of WIC participants was much lower than that of non-WIC participants (9.6 vs 21.0; $P<.001$). For Whites, IMR and preterm birth rates were not improved by WIC participation; however, there was a higher rate of maternal smoking among Whites. The racial disparity in IMR was dramatically reduced in WIC participants (9.6 for African Americans vs 6.7 for Whites; $P=.14$) as compared with non-WIC participants (21.0 for African Americans vs 7.8 for Whites; $P<.001$).

Conclusions. Prenatal WIC participation is associated with significant improvements in African American IMR. WIC participation reduces racial disparities in IMR between African Americans and Whites. (*Am J Public Health.* Published online ahead of print February 10, 2010: e1–e6. doi:10.2105/AJPH.2009.168922)

The infant mortality rate (IMR) is a key indicator of the health status of a community, and reduction of infant mortality is one of the stated goals of the Healthy People 2010 consensus document.[1] Racial disparities in IMR have been documented repeatedly; African Americans and other racial/ethnic minority groups experience an IMR that is significantly higher than the IMR Whites experience.[2] Factors influencing the birth of extremely preterm infants as well as access to specialized obstetric and pediatric care primarily determine disparities in neonatal mortality.[2] Because neonatal mortality accounts for about 67% of the national IMR, risk of preterm birth is an important factor to assess when seeking to decrease infant mortality.[3]

The Hamilton County, Ohio, IMR averaged 11 deaths per 1000 live births during 2003–2007 according to data compiled and provided via e-mail by J. Besl (project analyst, Child Policy Research Center, Cincinnati Children's Hospital Medical Center, April 2009). This IMR is significantly higher than the Ohio state IMR (about 7.8 deaths per 1000 live births for 2003–2007) and nearly twice the IMR for the United States (6.8 deaths per 1000 live births for 2003–2005). In multiyear trending analysis, the Hamilton County IMR has increased slightly since 1990, whereas the IMR for the United States has decreased slightly.[3]

Hamilton County has a marked racial disparity in IMR. The 2003–2005 average IMR for Whites in Hamilton County was 7.0 compared with 19.3 for African Americans. The US average IMR for 2003–2005 was 5.7 for Whites and 13.3 for African Americans.[3]

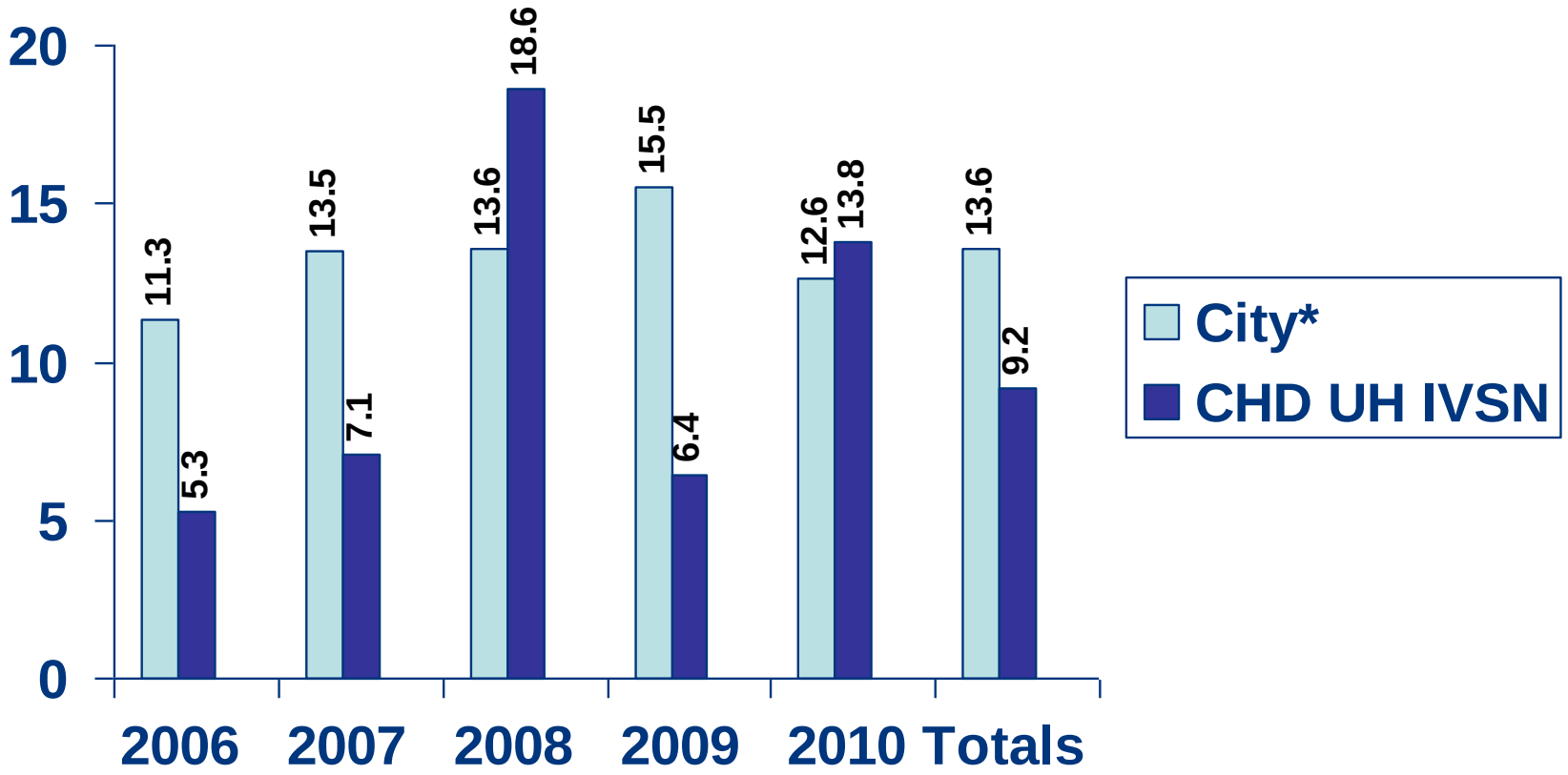
The percentage of live births delivered preterm nationally increased from 11.0% in 1996 to 12.8% in 2006. This masks a large racial disparity in preterm births in African Americans: 17.9% of live births in African Americans and 11.8% of live births in Whites were preterm in 2004–2006. Hamilton County had a similar increase in preterm live births: from 11.0% in 1996 to 13.3% in 2006. Racial disparities in preterm births in Hamilton County mirror the national landscape, with 17.9% of African Americans births compared with 12.0% of White births classified as preterm.[3]

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) began as a pilot program in 1972 to improve the nutritional status and health outcomes of vulnerable populations. Permanently authorized in 1974, WIC provides supplemental food, nutrition counseling, and health services referrals for low-income pregnant women, breastfeeding mothers, nonbreastfeeding postpartum mothers, and infants and children who are found to be at nutritional risk. Nationally, more than 8.7 million women and children participated in WIC in 2008. The Hamilton County WIC program, administered by the Cincinnati Health Department since 1974, served approximately 22 000 women and children through 17 different locations in 2008.[4]

Researchers in previous studies of women enrolled in WIC have assessed adverse birth outcomes such as low birthweight and prematurity. The majority of studies on the effectiveness of WIC in improving outcomes were completed more than 20 years ago. The National WIC Evaluation, conducted during the early 1980s and considered the most comprehensive WIC program evaluation, found a clear reduction in neonatal mortality rates and reduced preterm delivery among women enrolled in WIC prenatally.[5]

A major criticism of studies of WIC outcomes is that they have not properly controlled for selection bias into WIC, which may inadvertently improve reported outcomes for WIC participants.[6] In a study of data from the national Pregnancy Risk Assessment Monitoring System, researchers found strong evidence of a negative selection bias, suggesting WIC mothers have poorer forecasted birth outcomes than their non-WIC counterparts.[7] In a longitudinal survey, Kowaleski-Jones and Duncan used a sibling fixed-effects model to account for selection bias and found an increase in birthweight for infants born to mothers who were prenatally enrolled in WIC.[8] Although

Cincinnati City Infant Mortality Rate



Source: Cincinnati Health Department 2012

University Hospital 2012

Hamilton County Public Health 2012

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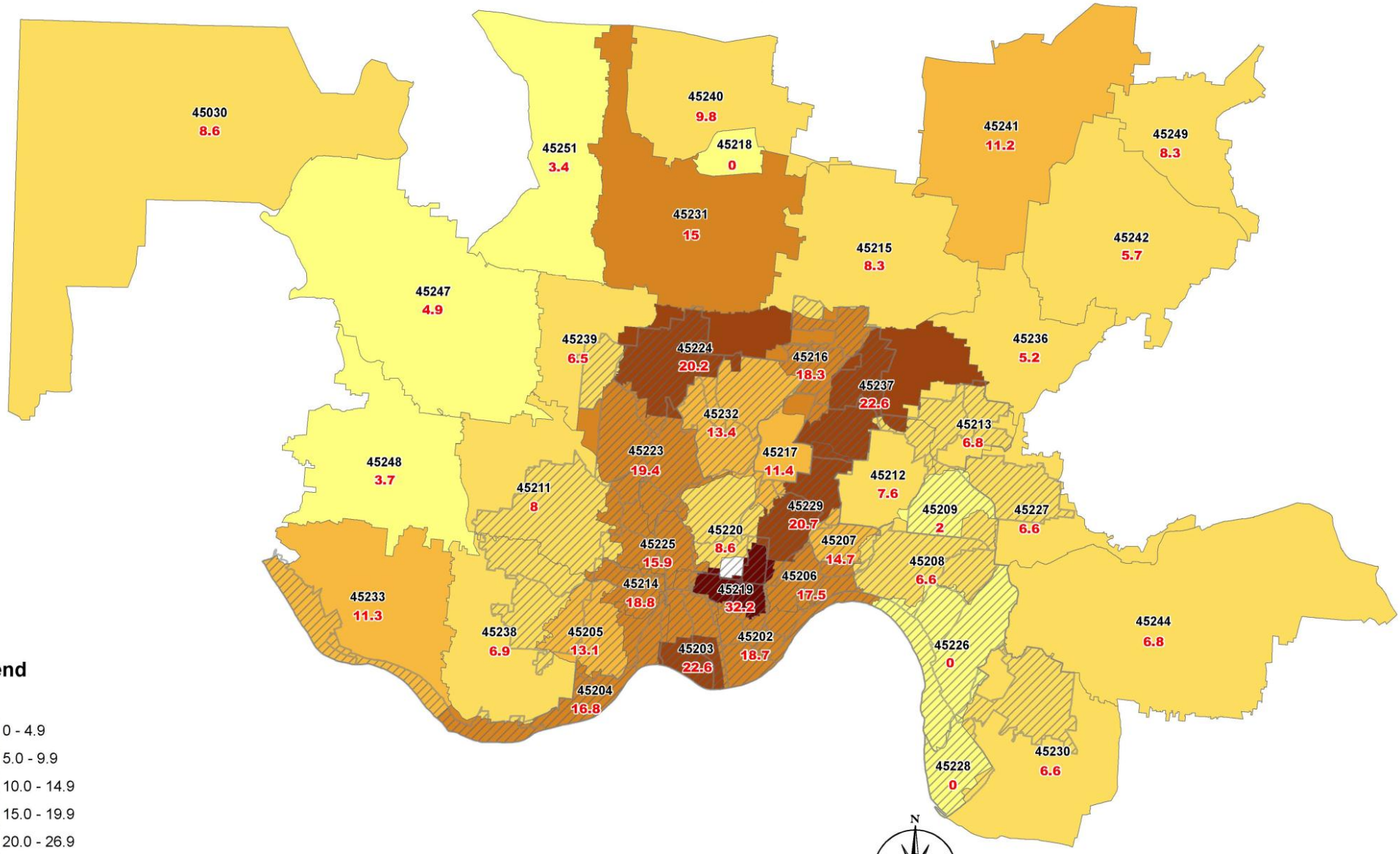
2010 CHD Client Racial Proportion IMR:

African American	56%	10.1
Hispanic	25%	7.4
White	19%	10.0
Aggregate		9.3

Infant Mortality Rate by Zip Code (2007-10)



Legend

Rate

- 0 - 4.9
- 5.0 - 9.9
- 10.0 - 14.9
- 15.0 - 19.9
- 20.0 - 26.9
- 27.0 - 32.2
- Cincinnati Statistical Neighborhood Approximations

*Contiguous area outside Cincinnati are 2007-08 IMR or 2009 only

0 1.25 2.5 5 7.5 10 Miles

1 in = 2 miles

N W E S

(24) Targeted Zip Codes
Infant Deaths and IMR

	2007	2008	2009	Total
Deaths	87	78	76	241
IMR	12.1	12.9	10.8	11.8

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(9) Single Digit IMR Zip Code

	2007	2008	2009	Total
Deaths	30	22	25	77
IMR	8.7	6.5	7.6	7.6

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(15) Double Digit Target Zip Code Specific Infant Deaths and IMR

	2007	2008	2009	Total
Deaths	57	56	51	164
IMR	21.5	21.6	19.0	20.7

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2010 Price Hill Infant Vitality Picture at a Glance

	Birth	Death	IMR
Price Hill Health Center	**161**	**1**	**6.2**
All CHD Health Centers	**537**	**5**	**9.3**
City of Cincinnati			**13.6**

Price Hill Zip Codes IMR:

- 45204 = 16.8 (2007-10)
- 45205 = 13.1 (2007-10)

Percent of Children Born Premature in Cincinnati By Source of Care and Race 2010-2011

	African-American (%)	White (%)	Hispanic (%)	All Births (%)
CHD/UH Infant Vitality Surveillance Network	12.1	5.0	6.5	9.4
All Cincinnati Health Care Providers	19.6	12.9	16.5	14.0

Source: March of Dimes, April 2010
Cincinnati Health Department 2012
University Hospital 2012

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Cincinnati Health Department
Prematurity Prevention Cost Savings

	2008	2009	2010	2011	2012	2013
CHD Preterm births	72	66	41	52	45	39*
CHD Preterm birth rates	17.2	14.2	9.1	10.8	10.7	9.5
CHD Preterm births prevented		6	31	20	27	33*

*through 9/13

Five Year Period Actual Costs Saved (117 Births)= $6,201,000 - $8,915,400

Source: Cincinnati Health Department 2012
University Hospital 2012

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Hospital Births-Deaths
Single Digit IMR Zip Codes
2010

	Deaths	IMR
Hospital A	----	5.1
Hospital B	----	4.5
Hospital C	----	21.6
Total	44*	8.5

*3 deaths from other hospitals

Source: Vital Records, Cincinnati Health Department 2013

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Hospital Births-Deaths
Double Digit IMR Zip Codes
2010

	Deaths	IMR
Hospital A	----	15.9
Hospital B	----	8.5
Hospital C	----	22.0
Total	46*	17.8

*1 death from another hospital

Source: Vital Records, Cincinnati Health Department 2013

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All Hospital, Community Health Center and Health Department Births-Deaths
IMR
2010

	Deaths	IMR
Hospital A	----	8.2
Hospital B	----	5.4
Hospital C	----	33.0
IVSN H.Ctrs	----	6.1
Total	86*	11.6

*4 deaths from other hospitals

Source: Vital Records, Cincinnati Health Department 2013

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Strategic Overview

- Infant, Maternal and Reproductive Health Surveillance Data for entire city
- Fetal and Infant Mortality review of cause of death with demographics
- Continued expansion of community health worker program with measured outcomes
- Expansion of the Reproductive Health and wellness Program
- Pathway for core ambulatory obstetric and core gynecologic care
- Continued grant applications to enhance surveillance, services, and measured outcomes

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Actionable Evidence Based Recommendations

Health Equity by Zip Code

- Assure clients in Target Zip Codes have home visitation assigned at discharge
- Assure clients in Target Zip Codes have home visitation during the prenatal period
- Expand participation in the Infant Vitality Surveillance Network. To improve infant vitality and prevent preterm births, proven interventions such as the CHD UH Maternal Health Improvement Project and IVSN needs to be scaled up
- Prenatal, Post natal and pre conceptual packages for providers e.g. pre conception care through family physicians; increasing access to care during pregnancy is an essential step towards addressing preterm birth
- Reproductive Life Plan
- Cribs
- Male Health Clinic
- Adhere to principles of transparency and responsibility

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THE CURRENT 2013 INFANT DEATH TRAJECTORY CITY WIDE IS

6.5 – 7.8 IMR !!!

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Questions?

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